upGrad

Data Science & AI Bootcamp

6.5 Months

IT'S A GREAT TIME TO GET INTO
DATA SCIENCE

14.4 LPA

Average salary for data scientists in India (2024)

Source: AmbitionBox

57.5%

CAGR of Indian data science market till 2028

Source: Millenniumpost

50%

Increase in search demand for 'Data Science' since 2020

Source: Exploding Topics

36%

Increase in growth of data science jobs by 2031

Source: Harvard

$378.7B

Size of global data science market by 2030

Source: Millenniumpost

WE'VE HELPED **1000+** LEARNERS ACCELERATE THEIR CAREERS

DATA SCIENCE AND AI BOOTCAMP

Nishant Kadian

From
Data Analyst
IBM

TO
Associate Data Scientist
FLIP ROBO

Vinay Kumar Jadhav

From
Workforce Analyst
amazon

TO
Sr. Analyst
Uber

Venu Madhav

From
Assistant Professor
DRK Institute of Science and Technology
[Approved by AICTE & Affiliated to JNTUH]

TO
DATA Scientist
FACTLY.

Yogesh Nataraj

From
Software Engineer
Trainee
NeST DIGITAL

TO
Analyst Trainee
DWAO

Ritik sharma

From
Back End Developer

concentrix

TO
Associate Analyst

GlobalLogic

Manish Kumar

From
Fresher

TO
Engineer Trainee

cognizant
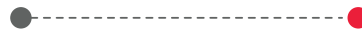
OUR LEARNERS WORK AT

AMERICAN EXPRESS	amazon	SWIGGY	Capgemini
tcs TATA CONSULTANCY SERVICES	Jio DIGITAL LIFE	Myntra	HSBC
kotak Kotak Mahindra Bank	Microsoft	Quantzig Smarter Decisions. Delivered.	Nippon india Mutual Fund Wealth sets you free

PROGRAM HIGHLIGHTS

LIVE

60+

Hours of Interactive Sessions

Real-World

12+

Industry Projects

Recognised

3+

Certificates

Showcase your work with

Hands-on Projects

Learn future-ready tools with

Generative AI

Crack job interviews with

Mentor-Led Internship

YOU SHOULD DO
THIS PROGRAM IF YOU ARE:

In college or fresh
out of it
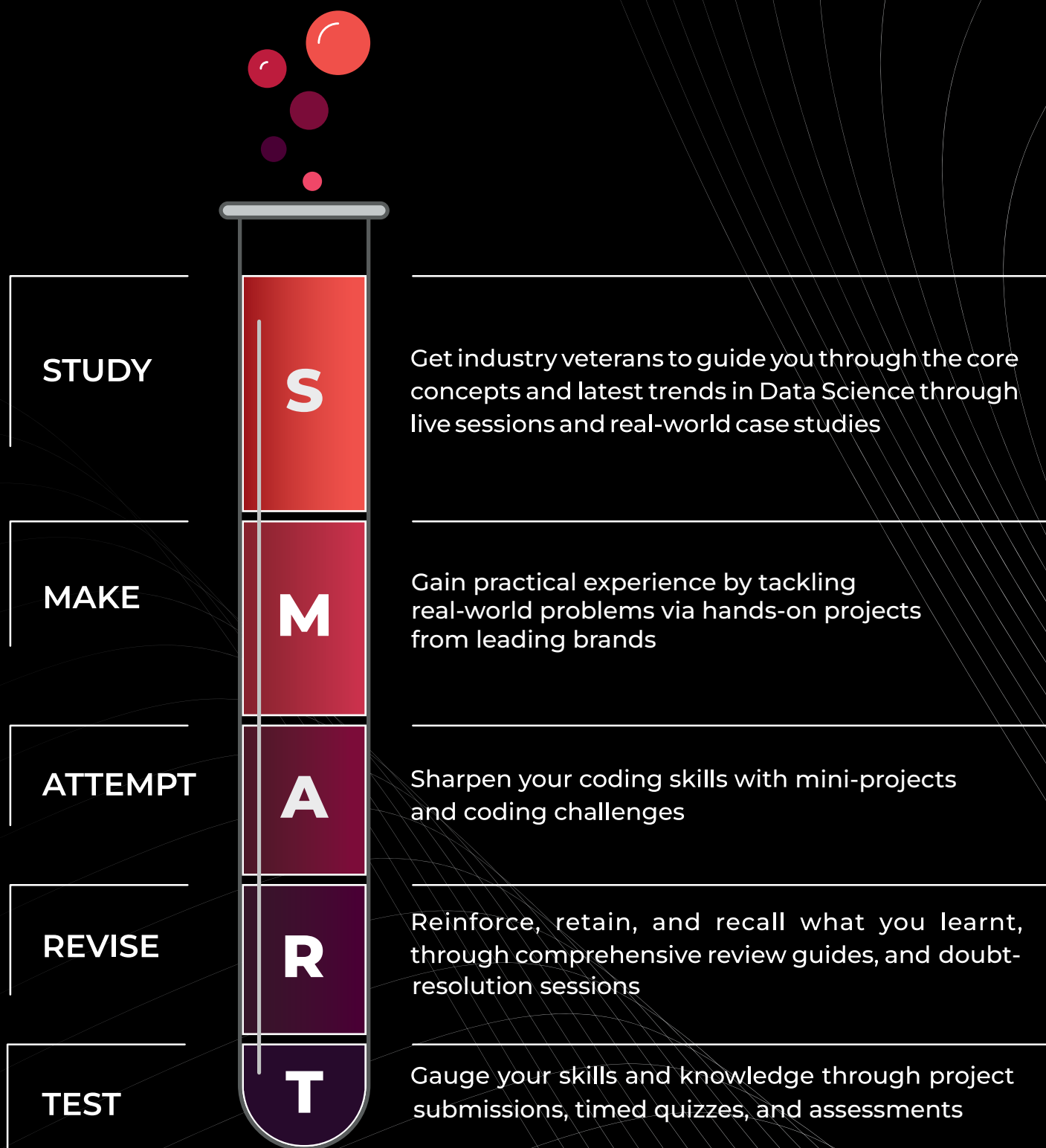
Looking to transition
into the data science field

Want to specialise in the
data science domain

Stuck in
the wrong field

OUR S.M.A.R.T FORMULA
HELPS YOU LEARN BETTER

STUDY

S Get industry veterans to guide you through the core concepts and latest trends in Data Science through live sessions and real-world case studies

MAKE

M Gain practical experience by tackling real-world problems via hands-on projects from leading brands

ATTEMPT

A Sharpen your coding skills with mini-projects and coding challenges

REVISE

R Reinforce, retain, and recall what you learnt, through comprehensive review guides, and doubt-resolution sessions

TEST

T Gauge your skills and knowledge through project submissions, timed quizzes, and assessments

CURRICULUM & CALENDAR*

📅 Preparation
Week 0

STUDY

- **Math for Data Science**
  Matrices, Eigen Values, Multivariable Calculus, Probability

- **Problem Solving Skills**
  Understanding and framing a problem, SMART framework, MECE approach, Root Cause Analysis, Proof of Concept

- **Introduction to GenAI Landscape**
  What is Gen AI, Gen AI Applications, How to be a Gen AI-Powered Data Scientist

SUBMIT YOUR APPLICATION AND UNLOCK THIS MODULE FOR FREE
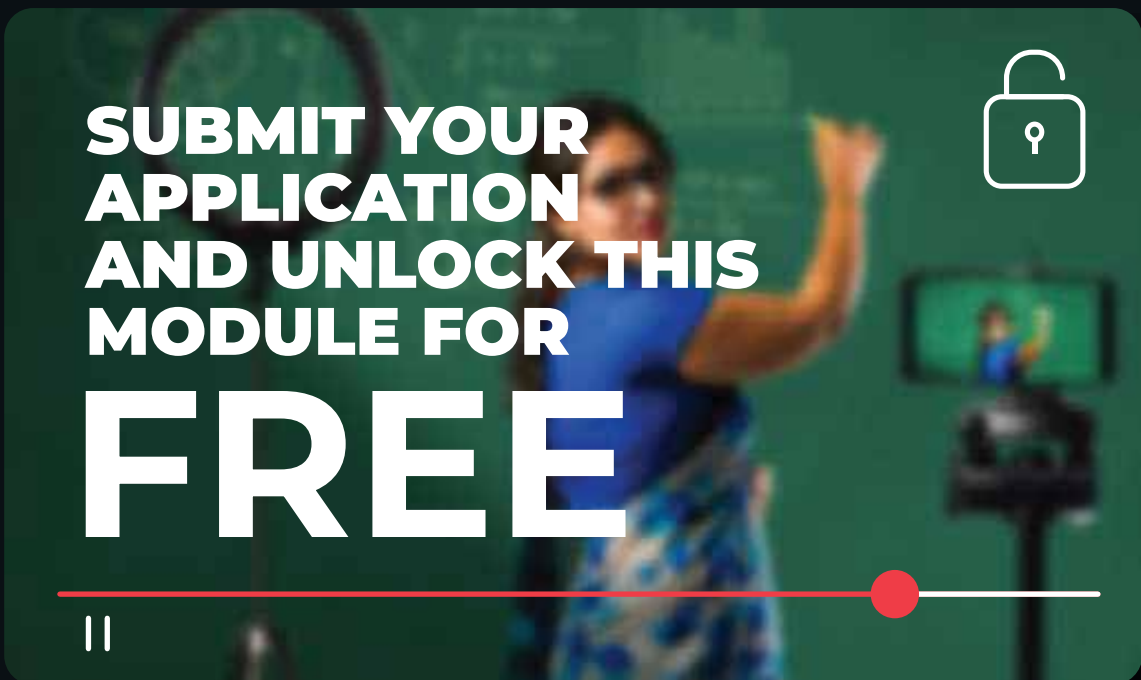
📅 Course 1: Python Programming
5 Weeks

STUDY

- **Coding Prerequisites**
  Setting up the Enivronment (Anaconda, Jupyter, Colab, Github, Kaggle), Python Syntax, Data Types, Python Operators

- **Python Data Structures**
  Strings, Lists, Dictionaries, Tuples, Sets

- **Python Control Structures**
  Conditionals, Loops, Comprehensions, Functions, Intro to OOP

- **Problem-Solving using GenAI**
  Logic Building and Problem Solving, Gen AI for Coding

Key Tools

python | OpenAI | GitHub | kaggle

MAKE

- Automate the management of product data to enhance operational accuracy and efficiency in e-commerce platforms

ATTEMPT

- Generate and refine Python code for data science efficiency

REVISE

TEST

- Summary Documents
- Doubt Resolution Sessions

- 200+ MCQs, Coding Questions, Assignment Submissions

Course 2: Python for Data Science
7 Weeks

- **NumPy**
  Multidimensional Arrays, Accessing Elements, Array Operations
- **Pandas**
  Creating Dataframes, Accessing Data, Dataframe Operations
- **Data Visualization in Python**
  Charts and Styling Options, Matplotlib and Seaborn Libraries
- **Descriptive Statistics**
  Types of Data, Measures of Central Tendency, Position, Variability, and Association, Applications
- **Data Preprocessing**
  Data Sourcing, Web Scraping, Data Cleaning
- **Exploratory Data Analysis**
  Univariate Analysis, Bivariate and Multivariate Analysis, Correlation, Gen AI for EDA

Key Tools

NumPy | pandas | matplotlib | seaborn | OpenAI

MAKE
Analyze loan application data using EDA to identify factors influencing loan default risk

ATTEMPT
- Stock Prices Analysis
- Titanic Data Analysis

REVISE
- Summary Documents
- Doubt Resolution Sessions

TEST
- 250+ MCQs, Coding Questions, Assignment Submissions

Course 3: Data Analysis Toolkit
8 Weeks

- **Basic Excel**
  Sort and Filter, Report making, Bucketing and Segmenting, Shortcuts, Formulae and Cell Referencing, Visualisations, Pivot Tables
- **Advanced Excel**
  Text and Statistical functions, VLOOKUP, INDEX and MATCH, What-If Analysis, Dashboards, Macros, Advanced Visualisations, Data Analysis ToolPak
- **Introduction to DBMS and MySQL**
  Overview of Database Languages and Architecture, Entities, Attributes, Relationships
- **Basic SQL Programming**
  ERD, Schemas, Constraints, DDL and DML Statements, Operators, Functions, Regular Expressions, Joins and Set Operations
- **Advanced SQL Programming**
  Window Functions, Case Statements, Stored Routines and Cursors
- **SQL Programming: Best Practices**
  Query Optimisation and Best Practices, Problem-Solving
- **Power BI**
  Overview, Data Preparation, Using DAX, Data Modelling, Building Reports, Best Practices, Power BI Service, Dashboards, Gen AI for Data Analysis

Key Tools

Excel | MySQL | Power BI | OpenAI

MAKE
Analyze movie data using MySQL to provide insights and recommendations for RSVP Movies' upcoming global project'
RSVP

ATTEMPT
- Superstore Sales Analysis
- Rental Properties Analysis
airbnb

REVISE
- Summary Documents
- Doubt Resolution Sessions

TEST
- 275+ MCQs, Coding Questions, Assignment Submissions

Course 4: Machine Learning
8 Weeks

STUDY

- **Inferential Statistics**
  Random Variables, Expected Value, Discrete and Continuous Probability Distributions, Binomial and Normal Distribution, CLT and its applications

- **Hypothesis Testing**
  Null and Alternate Hypothesis, Critical Value Method, p-value Method, Type I and Type II errors, T-distribution, A/B Testing

- **Simple Linear Regression**
  Introduction to ML, Assumptions, Model Building using Statsmodels and SKLearn, Performance Metrics, Residual Analysis

- **Multiple Linear Regression**
  Motivation for MLR, Multicollinearity, Model Building and Comparison, Feature Selection, Residual Analysis, Regularisation, Hyperparameter Tuning

- **Logistic Regression**
  Sigmoid Function, Odds and Log Odds, Classification Performance Metrics, Model Building, Feature Elimination

- **Clustering**
  Types, Distance Measures, K-Means and Hierarchical Clustering, Implementation in Python

- **Text Analytics**
  Introduction to NLP, Applications, Regular Expressions, Basic Lexical Processing, Gen AI for ML

Key Tools

statsmodels | python NLTK | learn | OpenAI

MAKE

- Build a logistic regression model to assign lead scores and identify potential leads for X Education to improve lead conversion rates

ATTEMPT

- Bike-Sharing Demand Prediction
- Auto Vehicles Sales Analysis

GEELY

- Mentorship for ONE of these:

sportskeeda | Uber | Accionlabs
snapdeal | TEACHFORINDIA | THE THINKING FACTORY

REVISE

- Summary Documents
- Doubt Resolution Sessions

TEST

- 275+ MCQs, Coding Questions, Assignment Submissions

Additional Content

- **Tableau**
  Creation of charts and dashboards
  Calculated Fields, Hierarchies, Parameters
  Functions and LOD Expressions

- **Advanced Machine Learning**
  Decision Trees
  Principal Component Analysis (PCA)
  Ensembles and Random Forests
  Association Rules
  Support Vector Machines (SVM)

- **Deep Learning**
  Advanced Lexical Processing
  Syntactic Processing
  Semantic Processing

- **Natural Language Processing**
  Neural Networks - Structure, Feedforward
  Training Neural Networks - Backpropagation, Tuning
  Convolutional Neural Networks
  Recurrent Neural Networks - basic RNNs, LSTMs and GRUs

Key Tools

tableau | MLXTEND | python NLTK | spaCy | TensorFlow | Keras | OpenAI

LEARN FROM THE VERY BEST

Mirza Rahim Baig
Startup Mentor

INDIA ACCELERATOR IA IND

Expertise in:
Machine Learning, Predictive Analytics, Business Analytics

zalando
Team Lead - Product Analysis

NMIMS
Marketing Analytics Visiting Professor

Flipkart
Ex-Analytics Lead

Anand S
CEO

GramenerGra
A Straive Company A Stra

Expertise in:
Data Storytelling, Data Visualisation

IIT MADRAS
Indian Institute of Technology Madras
Faculty

Infosys Inf
Prinicpal

BCG
Ex-Consultant

Dr. Mahesh Balan
Senior Manager

PayPal

Expertise in:
NLP, Machine Learning, Deep Learning, Multivariate Statistics

Ex-Senior Data Scientist

PhD - MIS

tcs TATA CONSULTANCY SERVICES
Ex-Systems Engineer

Anjali Agarwal
Sr. Learning Design Consultant

coursera

Expertise in:
Design Strategy, Machine Learning

upGradup
Ex- Sr. SME and Learning Experience Designer

exponentia.ai
Ex- Project Lead

EDVANCER
Ex- Sr. Faculty & Instructor

Rama Krishna Maddi
Growth Analytics Manager

Expertise in:
Business Analytics, Data Analysis and Visualisation, Problem Solving

amazon
Ex- Program Manager

latentview
Ex- Engagement Lead

ISB
Masters

Shreyas M
Senior Manager

zynga

Expertise in:
MySQL, Web Analytics, Machine Learning, Data Science, Data Visualization

Swiggy
Ex-Senior Manager

Mu Sigma
Ex-Decision Scientist

M.Tech (IISc, Bangalore)

ATTEND COMPLIMENTARY FREELANCING BOOTCAMP

PROGRAM DETAILS

Winning Freelancing Projects

- Industry landscape
- Niche Identification
- Portfolio creation
- Personal branding & thought leadership
- Leveraging freelancing platforms
- Testimonial creation

Tools: Upwork | fiverr. | designhill | Toptal. | GitHub | in | Bē | kaggle

Executing Freelancing Projects

- Pricing strategies
- Contracting
- Requirement gathering and scoping
- Project management
- Time management
- Payment management

Tools: Calendly | X | docusign | INVOICING TOOLS | PayPal

Priyanshi Poddar

Priyanshi freelances across multiple sectors, mainly in product, growth, branding/marketing and strategy solutions. She also mentors professionals navigating careers in the startup/tech/product/marketing space. Before taking the plunge into freelancing, she had 7+ years of experience, including consulting (Bain & Co) and product + fintech (Cred).

INDUSTRY-RECOGNIZED
SUITE OF CERTIFICATIONS

NSDC
Certification

Certificate from
Microsoft

Menternship
Certification

About
upGrad

"

upGrad is a leading global learning and workforce development company. We're on a single-minded mission of powering career success for every member of the global workforce as their trusted lifelong learning partner. Established in 2015, we have over 10 million learners who have upskilled in a range of online and offline programs from top universities in India and the world.

"

Ronnie Screwvala
Co-founder & Executive Chairman

GSV EDTECH 150
Top 150 Most Transformative Growth Companies

BRANDON HALL GOLD AWARDS
15+ Across 2 Years

Entrepreneur India
EDUCATION INNOVATION AWARDS 2020
Best Communication & Teaching Platform

PROMISING BRAND 2022
The Economic Times

EDUCATION COMPANY OF THE YEAR
VC Circle, 2022

ENROL IN 4 SMALL STEPS, THEN TAKE A GIANT LEAP

Submit Your Application — STEP 1

STEP 2 — **Get Shortlisted**

Offer Letter — STEP 3

STEP 4 — **Block Your Seat** — RESERVED

Click here to visit the website

Eligibility: Completed or pursuing a bachelor's degree

12

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